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Session: Poster Session I

Date: Thursday, March 3, 2016

Time: 12:45–14:15

Room: Hall 3 (Posters &amp; Exhibition)

**Diagnosis of Iranian MSMD patients in a proliferation and cytokine production setting**S.A. sarrafzadeh<sup>1,\*</sup>, M. Mahloojirad<sup>2</sup>, M. Nourizadeh<sup>2</sup>, Z. Pourpak<sup>2</sup>, M. Moin<sup>2</sup><sup>1</sup> Immunology, Asthma & Allergy, tehran, tehran, Iran, Islamic Republic of<sup>2</sup> immunology, Asthma & Allergy, Tehran, Iran, Islamic Republic of

**Background:** Mendelian susceptibility to mycobacterial diseases (MSMD) is a rare inheritance syndrome, characterized by a disseminated infection in children following BCG vaccination performed at their birth time. In the infected children with MSMD, there is a susceptibility to systemic infection with mycobacterium tuberculosis and nontuberculous including *Bacillus Calmette-Guerin* (BCG) vaccine

Aime:

We aimed to diagnosis MSMD patients over a period of 2 years at the main referral center for immunological disorders in Iran.

**Methods & Materials:** In this study, suspected patients with MSMD referred to “Immunology, Asthma and Allergy Research Institute” are studied genetically. The patients were affected with localized disseminated and recurrent lymphadenopathy after BCG vaccination at the birth time, and have normal immune system result tests

Their LTT function is normal in the exposure with PHA, is defective in the exposure to BCG

In this study, we measured IL12, IFN gamma levels to help identify patients

**Results:** In this study, we have 4 controls and 8 patients that had impaired response to IL-12. Although there was no significant relationship between LTT with PHA, it becomes significant when we added BCG alive

In addition the arrays of IL12(0.003), IFN gamma(0.015) between controls and patient groups was significant

**Conclusion:** Evaluating IFN-g and IL-12 assay can help for quick and short time diagnosis of MSMD disease (defect in IL12r1, receptor1, and defect in IL12 and IFN-g receptor). However genetic investigation in this disease is more complete and definitive for the diagnosis in these patients.

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**Comparative evaluation of Xpert(r) Carba-R assay with conventional methods for detection of carbapenemase producing enterobacteriaceae**N. Shaikh<sup>\*</sup>, L. Drego, A. Shetty, C. Rodrigues

&lt;org&gt;P. D. Hinduja National Hospital &amp; Medical Research Centre&lt;/org&gt;, Mumbai, India

**Background:** Carbapenemase producing Enterobacteriaceae (CPE) are a major public health threat with high transmissibility and limited treatment options. Xpert Carba-R(r) (Cepheid(r)) is a simple PCR-based assay for rapid (<1 hour) detection of bacteria carrying carbapenem-resistance genes (KPC, NDM, VIM, OXA-48, IMP-1). The aim of this study was to assess and compare Xpert(r) Carba-R assay with phenotypic methods using rectal swab specimens.

**Methods & Materials:** Inclusion criteria for collection of paired rectal swabs consisted of 72 patients already proven to have CPE in abscess/blood/sputum/urine/bronchial alveolar lavage samples and 83 patients considered to be having high risk factors for CRE carriage. Methods included two swabs, one of which was initially inoculated on MacConkey Plate with a 10ug meropenem disk and then inoculated in MacConkey broth containing 10ug meropenem disk. The other swab was processed as per instructions for Xpert Carba-R (Cepheid). A phenotypic resistance was confirmed using the CLSI guidelines (M100-S23). In case of swabs with culture positive and Xpert(r) negative results, isolates were analyzed again by Xpert(r) Carba-R.

**Results:** Out of the 155 swabs analyzed, a total of 109 (70.3%) and 102 (65.8%) patients were positive by phenotypic analysis and GeneXpert respectively.

115 isolated carbapenem resistant organisms from 109 patients comprised of *E.coli* (n=59), *Klebsiellae spp.* (n=41) and *Enterobacter spp.* (n=15).

New Delhi metallo-beta-lactamase (NDM) genes were isolated in 86 patients. Verona integron-mediated metallo-beta-lactamase (VIM) genes were isolated from 2 *E.coli* and 1 *K.pneumoniae*.

Co-production of NDM and VIM genes were seen in 9 isolates. Co-production of *Klebsiella pneumoniae* carbapenemase (KPC) and NDM genes were seen in 2 *K.pneumoniae*. Imipenemase metallo-beta-lactamase (IMP) were also seen co-produced along with NDM genes in an *E.coli* & *E.aerogenes* isolate.

11 swabs were CPE negative by Xpert(r) and phenotypically positive, 3 of 11 isolates were positive by Xpert(r) Carba-R.

The sensitivity, specificity, PPV, NPV of Xpert(r) Carba-R test was 93.5%, 100%, 100% and 86.7% respectively.

**Conclusion:** Xpert Carba-R Assay could be utilized for screening of high risk patients and implementation of infection control measures which will help in preventing spread of CPE.

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